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DOI: <https://doi.org/10.1080/14653125.2016.1190077>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-133137>

Journal Article

Accepted Version

Originally published at:

Papageorgiou, Spyridon N (2016). Methodological quality and outcome of systematic reviews reporting on orthopaedic treatment for Class III malocclusion: Overview of systematic reviews. *Journal of Orthodontics*, 43(2):89.

DOI: <https://doi.org/10.1080/14653125.2016.1190077>

Methodological quality and outcome of systematic reviews reporting on orthopaedic treatment for Class III malocclusion: Overview of systematic reviews.

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Words: 456

Manuscript

Class III malocclusion represents an important proportion of orthodontic patients and is often associated with severe aesthetic, functional, and social repercussions for the patients. As a consequence, many orthodontists seek to correct or improve such a malocclusion in the pre-adolescent years and restore the patient's well-being at an early stage.

The present study by Jamilian *et al.* nicely summarizes existing evidence on the effectiveness of various orthopedic Class III treatment modalities from systematic reviews of clinical studies. The authors have meticulously followed contemporary guidelines regarding the systematic review process by comprehensively searching multiple literature databases and having study selection, data extraction, and quality assessment performed by two separate authors. Finally, the AMSTAR (A Measurement Tool to Assess Systematic Reviews) tool was used to assess the internal validity of the included systematic reviews, which has been shown to have excellent inter-observer agreement, reliability, and construct validity.

As far as the methodological quality of the existing systematic reviews is concerned, the AMSTAR scores ranged from 3/11 to 10/11, with a distinct trend for improvement through the years, which was associated with a parallel decrease in the number of studies included in the review. This could reflect a greater care taken by orthodontic researchers in the selection of appropriate studies that provide high-level evidence. On the other side, the authors noted that several methodological issues that have been associated with bias, like basic study design, nature of the control group or the adequacy of the patient sample was sometimes ignored or not handled appropriately by the authors of the included systematic reviews.

As far as Class III orthopedic treatment is concerned, the authors provided a comprehensive summary of empirical evidence on maxillary protraction and many important treatment-related factors, including the magnitude, duration, and direction of force applied by such appliances. Additionally, the effectiveness of the relatively new skeletal-anchored maxillary protraction appliance or of more traditional appliances like the chin-cup or Fränkel 3 appliance were assessed.

However, the landscape of existing evidence is far from ideal. As the authors noted, although much research has been conducted on the short-term effects of early orthopedic treatment, the lasting effects of such an early intervention protocols, as well as possible factors that influence the results' stability remain to a great extent

unknown. Furthermore, almost all available research is based on specific radiographic outcomes, which might have little or no bearing to patient-related values or patient preference. Taking also into consideration recent court rulings emphasizing the need for patients to be fully aware about the effectiveness and risks of any procedure undertaken to make an informed consent, it seems that information from this overview of Class III reviews can be used and built upon to carefully design new much-needed clinical trials on this field.